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Dr. James W. Gregor
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ACCOUNT OF THE
INTRODUCTION
OF THE
COW POX



INDIA.
by
George Hier M. D.

Bombay.

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THE following account of the successful introduction of the vaccine disease into Bombay, and its diffusion throughout India, is respectfully inscribed to the HONORABLE JONATHAN DUNCAN, to whose humane and zealous interposition, the Indian world are essentially indebted for the blessings that have already marked the progress of vaccination, as well as for the incalculable benefits that must ultimately arise from it, to every quarter of the British Dominions in Asia.

By his Very Obdt. Humble Servt.

GEORGE KEIR,
M. D.



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ACCOUNT OF THE
INTRODUCTION
OF THE
COW POX
INTO
INDIA.

THE principal object in view in collecting the following reports, after tracing from authentic documents the history of the introduction of the disease into this country, is to enable Gentlemen in the Company's service to propagate it in different situations, where they are frequently employed at a distance from Medical men. In doing this, some apology may be necessary for making use of the correspondence of different Gentlemen without their permission, and for omitting to take notice of many valuable and important letters on this subject, which would have increased the size of this pamphlet beyond the limits allotted to it, and could not have answered any good purpose, as the object is to present to the public a short account of the introduction

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of the disease into Asia, which at a future period may be interesting.

The Human species, whether in a state of rudeness or civilization, may be considered as inheriting the probability of suffering once in their lives, from the influence of certain diseases, occasionally loathsome, and frequently fatal.

How much is consequently due to the man, whose discoveries confer a blessing on mankind, capable of heightening the enjoyments of life, by securing it from those maladies by which it may be rendered miserable, or extinguished altogether.

Such has been the late important discovery of Dr. Jenner, so justly acknowledged by his country, and which cannot fail to transmit his name to posterity, as one of the greatest benefactors of the Human race.

The persevering zeal of Dr. Jenner has surmounted every difficulty, and he now enjoys the heart-felt satisfaction of observing, that his endeavours to make the world acquainted with the singular disease of cow-pox, has been attended with the desired success; and that his doctrines are as generally received, as the importance of the subject deserves.

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There is no country where the small-pox proves so great a scourge as it does in India; owing to the climate, as well as the prejudices of the inhabitants. In Europe, much had been accomplished by attention to a salutary regimen; here, the unhappy sufferer is often deprived of the chance there might be of his deriving benefit, from either regimen, or medical treatment.

The beneficial consequences to be expected from the communication of so mild a disease as the cow-pox, in substitution of one so generally loathsome and fatal to all ranks of men in India, are great beyond all calculation.

The vaccine disease was introduced at Bombay in June 1802, and for some months past it has been disseminated throughout the Peninsula of India, the island of Ceylon, Bengal, the Malabar provinces, and elsewhere; this affords a very satisfactory proof of the benevolent zeal of the medical faculty in India, and is certainly highly honourable to them. The difficulties which they daily experience at many stations, in procuring subjects for continuing the disease, can scarcely be judged of by Practitioners in Europe. Wedded to custom, and the usages of their Ancestors, the Natives of India

view with distrust and apprehension every innovation, and few of them can yet be persuaded that a disease so mild and harmless as the vaccine affection, can shield their offspring from so serious and deplorable a calamity as the variolous contagion.

The account of Dr. Jenner's discovery soon reached India, and excited in the mind of every Professional man, the most lively anxiety to be possessed of an agent reputed so harmless, and capable of securing mankind against the Small Pox.

It is very probable however, that the zeal and efforts of medical men might have been unavailing, had not the influence of Government been interposed to forward their endeavours; this acknowledgement more particularly applies to the Honorable Jonathan Duncan Governor of Bombay. He was early impressed with a just sense of the value of extending vaccination to India, and he judged that the most likely way to secure the speedy completion of so desirable an object, would be to interest His Majesties Minister at Constantinople, to afford his co-operation, by directing virus to be forwarded from time to time for Bombay, by the way of Bagdad and Bussorah. The following correspondence on this interesting subject will shew how much we owe to Lord Elgin, and Mr. Duncan.

Extract

*Extract of a Letter from the Honorable J. Duncan;
to His Excellency the Right Honorable, the Earl of
Elgin, dated Bombay, March 24th 1801.*

“ I beg leave to avail myself of this opportunity to request your Lordship’s kind attention to the accompanying Extract of my letter of this date, to Mr. Jones the Resident at Bagdad, and to solicit the favor of your causing to be transmitted to that Gentleman, in one or two phials, and an equal number to me direct to this place, some of the fresh-est and best matter of the cow-pox, that may be procurable at Constantinople or in the neighbour-hood, respecting which, the Hon’ble Mr. Bruce will also I believe, have written to your Lordship; and I need only add that if we may rely on the ac-counts published of the mild nature of the cow-pox, Europe cannot bestow a greater favor on India, than by the substitution of this benign contagious matter, to the very destructive one, that now an-nually carries off so many of our inhabitants.”

*Extract of a Letter from the Honorable J. Duncan;
to H. Jones Esq. Resident at Bagdad dated Bom-bay, 24th March 1801.*

“ If you could procure from Constantinople some of the matter of the cow-pox, so carefully put

up in phials, or any other secure method, as to reach Bombay in a state fit to give the infection, it would be rendering great benefit to India, where thousands now annually fall victims to the ordinary kind. Perhaps to secure the matter arriving here in a proper state, it may be expedient to have it renewed by inoculation at Bagdad:—but of this Mr. Short the Physician with you, must be the best judge. Mean while, in aid of the endeavours which I doubt not you will make to so good an end as the present; I have requested the favor of his Excellency Lord Elgin, to countenance and assist whatever means, on your application, the Medical Gentlemen at Constantinople may judge the best adapted to the securing of its transmission in the freshest practicable state.

I need not suggest that the matter of the cow-pox should not be fumigated, as that destroys its virtue, or risks doing so, as was experienced lately, in the instance of some that the Hon'ble Mr. Bruce brought with him to Bombay.

*Extract of a Letter from His Excellency the Right Hon'ble the Earl of Elgin, to the Hon'ble Jena-
than Duncan Esq. dated 31st July 1801.*

“ I have this moment the honor of receiving your Letters of the 24th and 25th of March, and
tho’

tho' it is impossible for me to answer them by the present occasion; yet I am anxious to assure you, without delay, of their arrival. I shall pay early attention to your wishes—and in a particular manner to your desire of receiving the cow-pox matter. The difficulty of conveying the infection, rendered abortive several attempts I have made this spring, to bring it here. But as I have directed, that some should be sent to me from Vienna by every post, I hope to have it in my power to convey to you some ~~ere~~ long.

Extract of a Letter from Lord Elgin, to the Hon'ble Jonathan Duncan, dated 8th Sept. 1801.

I have the honor to inclose you one quill, containing vaccine matter, I do this merely, in the view of attempting every thing—But my great hopes, are thro' Mr. Manesty;—I had sent him the matter last year which failed;—But have now fairly established it at Constantinople, and the best proof I can offer of its mildness is, that I have inoculated my child, on the 6th of September, tho' only born on the 31st of August.

I have had the matter put up by Dr. Scott, a very able Physician in my family, in various shapes, and with every possible degree of care;—this I have sent

sent to Mr. Manesty, with directions for him to proceed in his experiments with these lancets &c. until the disease takes at Bussorah; then to send forward to you, what remains of them, together with some fresh matter from Bussorah, with a Book lately published at Vienna, on the history and nature of the vaccine.

I sincerely trust, that these means will be effectual in extending so innapreciable a benefit, to your part of the world.

Extract of a Letter from the Hon'ble Jonathan Duncan Esq. to His Excellency the Earl of Elgin, dated Bombay 5th February 1802.

" I have the honor to acknowledge your letter of the 8th of September respecting the vaccine matter, which I received, but on the trial, it has failed, as was indeed, to be apprehended from the length of its passage, since it did not reach me till the 31st December;—I think it very probable, that the method your Excellency has proposed to Mr. Manesty, may prove more successful, and in that case your Excellency will indeed have proved the medium of conferring an inestimable benefit on India."

It was not however by sea only that efforts were made to get the cow-pox to India, as the following letter

Letter from the Medical Board, and the recommendation of Government to the Court of Directors will show.

*Copy of a Letter from the Medical Board, dated
Bombay, August 4th 1801, to the Hon'ble J.
Duncan, &c. &c.*

HON'BLE SIR,

The late very happy discovery that the disease produced by inoculation from the cow-pox, secures the human body, ever afterwards, from the small, although of great importance in Europe, should we imagine, be of still more consequence in this country.

The small-pox from inoculation, is certainly here, a much more dangerous disease than in Europe; for a greater proportion die of it, and of those who escape, great numbers suffer severely from it. We think that one third of those who get the disease naturally, are destroyed by it; at times indeed, it appears under a much milder form, but occasionally, the mortality from it is still more deplorable. From what we have said, it will be evident that a disease like the cow-pox, would be a great blessing to this country, and we have reason to believe that the natives from their prejudices in favour of

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the cow, would generally communicate it to their children; which will never be the case with regard to the small-pox.

Several attempts have already been made to bring the cow-pox to India, but without effect, for the matter on its arrival here, has not been found to communicate the disease: we are under particular obligations on this subject, to Mr. Barclay Apothecary of London, who got, unsolicited, the matter of cow-pox, and sent it to Portsmouth to Mr. Forbes, Surgeon of the Lord Hawkesbury; begging of him to inoculate with it during the passage, and by that means to carry it to India, in a recent state: Mr. Forbes on his part was not wanting in every attention; for soon after he received it, he inoculated several persons on board of the ship, but he was not able in a single instance to produce the disease. The plan recommended by Mr. Barclay seems very judicious, and if a sufficient number of people who never had the small-pox, were sent in a ship, we imagine it could hardly fail of success, perhaps it might be proper to send some cows with the same intention.

It might also be desirable to have the matter of cow-pox sent from Constantinople to our Surgeon

at

at Bagdad, who would inoculate with it, from whence it might be carried to the Surgeon of Busforah, and finally with a prospect of success, to this place.

In order to encourage exertion, it might be proper to offer some reward to the person who should first bring this disease to India.

The influence that the cow-pox may produce on the happiness and the life of so great a society of mankind, is of so much importance, that we cannot doubt but your Hon'ble Board will be ready to forward all our wishes for its introduction into India.

W. MOIR.
H. SCOTT.

Extract of a Letter from the Honorable the Governor in Council of Bombay, to the Honorable the Court of Directors, dated August 14th 1801.

PARA. 55. We have the honor to enclose Copy of a Letter from the Medical Board relative to the vaccine pox, on which we have earnestly solicited your Hon'ble Court's assistance for the secure transmission of the matter to this country, in the manner suggested by them, or in any other, that may appear to your Hon'ble Court still more efficacious and likely to succeed.

PARA.

PARA. 56. Our President has written on the same subject, to the Earl of Elgin, and the Residents at Bussorah and Bagdad, have also, been instructed by our Secretary to the effect of the Medical Board's further recommendations.

J. A. GRANT,
Secretary to Government.

His Excellency Lord Elgin readily gave every support to the request of the Governor of Bombay. He directed vaccine virus to be forwarded from time to time, to Mr. Jones the Hon'ble Company's Resident at Bagdad.

The Surgeon attached to that Residency Dr. James Short, was particularly qualified to attend to so interesting a subject, and early in the year 1802, fortunately succeeded in producing the true vaccine disease at Bagdad.

Dr. Short lost no time in forwarding virus to our Surgeon at the Residency of Bussorah Mr. Milne; who also was fortunate in establishing the disease at that place.

It was peculiarly lucky that such men as Dr. Short, and Mr. Milne, had the management of the disease at Bagdad and Bussora, and the public owe

these

these Gentlemen no trifling obligation for their care and zeal in preserving the disease under many very discouraging circumstances.

Mr. Milne was aware of the importance of speedily sending on matter for Bombay, which he did by every opportunity that offered. For some time however we were not more fortunate with the various supplies we received from Mr. Milne, than with several packages which were at different periods sent to us from Europe, by sea conveyances.

- One of the most important steps that the vaccine matter made was from Constantinople to Bagdad, altho' the distance is a journey of from 25 to 30 days. From Bagdad to Bussorah the distance is much shorter, so that Mr. Milne received it in a few days, and was less likely to fail in succeeding with it.

The next difficult step, perhaps the most difficult of the whole, was to produce it in Bombay, after a sea voyage, and after it had been kept for weeks before we could use it. This will account for the many failures that we experienced before we were successful.

The Recovery left Bussorah late in May, and as the season was favorable for making a quick passage,

sage, reached Bombay in three weeks. Captain Groube brought from Mr. Milne supplies of virus carefully put up in different ways;—On our receiving it, between 20 and 30 subjects were inoculated with the threads impregnated with the virus, in various modes, and by different Surgeons.

Only one instance of success occurred in all those inoculated. Anna Duthall, the Child of a female servant belonging to Captain Hardie, was inoculated by Dr. Scott on the 14th of June, with many others; Anna was about 3 years of age, healthy, and certainly never had had the small pox.

She was remarkably good tempered, and to her quietness and patience in suffering the operation, its success is in some measure to be attributed.

The pustule began to show itself about the end of the 3d day, afterwards she had slight symptoms of fever, and some degree of swelling and uneasiness in the axillary glands: these symptoms gave us hopes, and led us to watch the progress of the disease with careful anxiety. On the 8th day, the pustule was of the proper size, it was raised and flat, and consisted of many cells, which on being punctured, gave out a transparent fluid.

This

This circumstance, if any evidence had been necessary to convince us of the genuine nature of the disease was decisive. It was now certain that we were in possession of the Cow-pox, and that our heretofore fruitless endeavours were crowned with success. There was only one pustule on the inoculated spot, nor did the child suffer any material inconvenience during the whole progress of the complaint.

On the 22d of June, the 8th day of the disease, five children were inoculated with virus from the pustule; these subjects were all affected in the same way, and as the local, and constitutional symptoms were similar in all of them, every medical man who examined the pustule, was decidedly of opinion, that the disease we had produced was of a genuine nature.

The following Letter was now published by the Medical Board for general information.

TO THE EDITOR OF THE BOMBAY COURIER.

For the satisfaction of the public, and the information of professional men in India, we beg of you to publish the following account of the introduction of the Cow pox into this place. We have it now in our power to communicate the benefit of this important

important discovery to every part of India, perhaps to China, and the whole eastern world. We shall spare no pains in accomplishing a purpose so desirable, by which one of the greatest evils that has afflicted humanity, may be diminished in a great degree, or even extinguished altogether.

In the course of the last twelve months, we have repeatedly received by sea from England the vaccine matter, with which many children have been inoculated to no purpose. We were not more successful with matter which was sent to us directly by land from Constantinople. Fortunately Dr. Short, a Surgeon on this Establishment, residing at Bagdad, produced the disease at that place. He immediately forwarded the matter to Bussora, where Mr. Milne, the Surgeon of that Residency, also succeeded in infecting a patient with it;—Mr. Milne soon afterwards inoculated a number of other children, and he sent the vaccine matter to us by several ships. Even with this matter, we were for a time unsuccessful, and after thirty or forty trials by various methods and by different Surgeons. A fortunate inoculation at length produced the vaccine disease in Anna Dusthall, who is perhaps the first human being who underwent it in India. This child, the daughter of a servant of Captain Hardie,

is about three years of age. She is very healthy, and certainly never had the small pox. It is necessary to mention these circumstances, as from her alone the whole of the matter that is about to be sent all over India was at first derived.

We have received no history of the patients from whom it was taken at Bagdad and Bussora, but we trust with confidence, from our knowledge of the medical gentlemen at those places, that no pains have been spared to make it pass thro', unexceptionable bodies.

From Anna Dusthall, on the 8th day of her disease, and on the 22d of last month, seven children were inoculated: five of those, who certainly never had the small-pox, took the infection, and have already gone thro' nearly the whole course of the vaccine disease. The other two were not infected, but there is some probability that one of them has had the small-pox. From the five children that were infected, about thirty more have been inoculated, and a great number of them no doubt will take the disease. From these last we shall send the vaccine matter to the other Presidencies, to Surat, Poona, &c. &c. and care shall be taken that none shall be employed, but from an unexceptionable source.

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The vaccine disease in Anna Dushall passed, as we have said through its ordinary course, as described by writers on the subject. The pustule began to show itself about the third day. During the course of the fifth and sixth, she had slight symptoms of fever, and some uneasiness in the arm-pit of the inoculated side. The pustule on the 8th day, was of the proper size for that period. It was flat and rather concave, and it consisted of many cells, which on being pricked gave out a transparent fluid. By the tenth day, the inflamed areola round the pustule was extensive, and very distinct in spite of the blackness of her skin. She had only a single pustule on the inoculated part, nor during the whole time did she suffer any material inconvenience from the complaint.

All the five children who were inoculated from her had a similar train of symptoms. On two of them, whose parents were European, the inflamed areola, from the whiteness of their skins, was much more distinct than it had been on Anna Dushall.

We have thus detailed the progress of the symptoms, and we have no doubt but that this is the genuine Cow-pox. Some Surgeons here who have seen the disease in Europe, are of the same opinion.

We

We hope therefore, that this will tend to quiet the apprehensions of parents, which in some instances we find to be very great, and that our experience at this place, so far as it has gone, will give confidence to practitioners. Almost all the medical men at this presidency have witnessed this disease, many of them are inoculating for it, nor do we understand that any difference of opinion has arisen concerning its nature.

One test indeed we still want of its genuine nature, and that is, its power of preventing the various infection, to this test it shall shortly be put. As this Island does not contain less than 150 thousand people, sufficient supplies of children must arise to keep up the disease, even without any dependence on Salfette or the neighbouring Continent.

The Hindoos and Parsees, both here and at Surat shew the utmost desire of having their Children inoculated with the vaccine disease. We shall instruct the Native Practitioners of Physic regarding it, but on this part of the subject we are not without apprehensions. Whoever is sufficiently acquainted with what has been done in Europe with regard to the Cow Pox, is aware that some foreign poison, such as that of the small Pox, is apt to be mixed with it, when a compound disease arises, or some

some other poisonous matter may be from various causes introduced, instead of the vaccine virus, a disease altogether different is produced. The history of the Count de Mofset as lately detailed by Dr. de Carro affords a most instructive lesson on the subject. The greatest care therefore should be employed to warn the Native Practitioners, that the vaccine matter may be degraded by many causes, and that their utmost attention is necessary to prevent it.

We can affirm from our own knowledge, that this Government have anxiously assisted our wishes for procuring the vaccine disease by the way of Bussora. They represented to Lord Elgin the importance of it to this great society of mankind, and they called for the aid of the Residents of Bussora and Bagdad. Doctor de Carro of Vienna, who has distinguished himself so honourably in this career, transmitted in the first instance the vaccine matter to Lord Elgin, who several times before had shewn us his attention to the subject. By his Lordship's orders it was sent to our Resident at Bagdad, and again to the Resident at Bussora. To both those Gentlemen the public are under great obligation for the interest they took in the subject. Finally it fell into the hands of Dr. Short and Mr. Milne as we have already said, nor could it have been more fortunately placed. We

We have been more particular than was necessary for the medical profession, who must be supposed to be in possession of every fact that has occurred on the subject in Europe, but as we shall disperse the vaccine disease very widely, as it will effect, and as we hope it will promote, the happiness of every family, we wish to satisfy the public at large concerning the sources from which we have derived it, and the foundation of our belief, that it is of a genuine kind.

WILLIAM MOIR,
HELENUS SCOTT.

Bombay, July 2d, 1802.

The Medical Board impressed with a just sense of the important consequence of the acquisition they had made, and anxious to diffuse it throughout India, directed virus to be forwarded to Bengal, Fort St. George, Ceylon, and to all the other principal Stations every week, until they had the satisfaction of learning that the disease was produced at Hyderabad, Masulipatam, at different Stations on the Island of Ceylon, and elsewhere.

It then became unnecessary to send virus from Bombay, as supplies could be got with greater quickness,

quickness, and probability of success, from Stations nearer to those parts. The rainy season was probably unfavourable to the matter's retaining its specific properties for any length of time, altho, every precaution was taken to preserve it.

Flattened silver canulas were prepared about an inch in length, and the threads carefully soaked in the virus, after being perfectly dried, were put into those tubes, and the ends secured with wax. These canulas were forwarded by post, to all the principal stations, until accounts were received as I have said, that this extraordinary attention was no longer necessary.

The following communications shew how rapidly the disease was conveyed from place to place, and afford a proof of the humane attention of the Medical Gentlemen at the different Stations.

Copy of a Letter from Mr. Ure at Hyderabad to Dr. Anderson, Fort St. George, dated August 24th, 1802.

DEAR SIR,

I have the pleasing satisfaction of informing you that we have at last succeeded in getting the Cow-pox at Hyderabad, and I now send you by express

some

some threads well dipped in the vaccine matter, taken from the arm of a healthy child who had four distinct pustules, near the place where the matter was inserted. This child was inoculated on the 18th of this month with vaccine matter, which was dispatched from Bombay to me by Dr. Scott on the 11th instant. In about eight days hence I shall send you another supply of the vaccine matter. I have also by this express sent some of it to Dr. Harris at Masulipatam.

Copy of a Letter from Colin Rogers Esq. Medical Superintendent Trincomallie to Dr. Anderson Fort St. George dated September the 14th 1802.

DEAR SIR,

You must long ere this have heard with pleasure of the successful introduction of the Cow-pox at Trincomallie, where I had first the good fortune to produce the disease, by inoculation with matter sent from Bombay on the 10th of July, by Dr. Helenus Scott.

On the 11th of August, the day on which this matter arrived here, I inoculated six children, out of which number one succeeded in John Sybelle, a boy of ten years old; from him a succession of subjects have been inoculated, and in all the genuine vaccine

vaccine disease appeared. It has since been propagated to the districts of Molative & Jaffnapatam, from whence it will soon be extended to the coast. As you have not yet succeeded at Madras, I take the liberty to inclose you some cotton threads, imbued with vaccine matter, taken this day the 9th from inoculation, from a child of European parents, the pustule on whose arm furnished matter for seven children besides.

Every friend to humanity must wish you success in your endeavours to introduce and diffuse this valuable disease, which is proved to be a safe and mild antidote, for that most loathsome and fatal one the small pox, which 'tis to be ardently hoped will soon be extirpated from this country.

His Excellency Governor North impressed with the importance of the discovery, has prohibited the further admission of patients into the small pox Hospital, which he means to suppress at the end of the present month, when the attention of the Medical Superintendants and overseers of that Establishment will be confined to the propagation of the vaccine disease; thus completing the chain of humane and liberal improvements for which His Excellency is so eminently distinguished:"

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The success of Mr. Rogers, with virus upwards of a month from Bombay, affords a proof as well as our success with that from Bussorah; that the specific virtues of the vaccine poison, is in some cases preserved for a longer period, even in this country, than is generally supposed.

The matter that produced the disease on Ceylon, was sent in a canula by Dr. Scott, to His Excellency Governor North, and was received about the 10th of August, by His Excellency who was at that time at Trincommallie. Mr. Rogers after inoculating with the virus, was obliged to proceed to Jaffnapatnam on urgent business; and on leaving his station, entrusted the care of his vaccinated patients to Mr. Gilbert Hall, Surgeon of His Majesty's Malay Regiment.

This Gentleman watched the progress of the inoculation, and on the 8th day had the happiness to find, that one of the subjects was affected with slight Fever; on examination he found a genuine vaccine postule formed, with the usual local and constitutional symptoms, necessary to afford a perfect conviction, of the patients being affected with the true Cow-pox.

Mr. Hall immediately used every endeavor to procure subjects for inoculation, but without success;

cess; all his attempts to convince the natives of the blessing of the discovery, the safety and mildness of the disease, were without effect. As a last resource they were tempted with Gold, and by the influence of this agent, Mr. Hall procured 12 subjects, which were speedily inoculated from the pustule.

From these, an abundant supply of matter was obtained, and rapidly disseminated throughout the island. Great merit is certainly due to Mr. Hall, for his zeal and perseverance, in taking advantage of the fortunate inoculation of Mr. Rogers. The practice of vaccine inoculation soon became general at Ceylon;—the faculty there, as well as elsewhere, have evinced uniform zeal and humanity, altho' at some stations it has been found difficult to procure subjects for successive inoculations. On the island of Ceylon however, from the institution of Small pox Hospitals, the natives being accustomed to the practice of inoculation, have wisely preferred the vaccine to the variolous disease.

Copy of a Letter From W. Prichard, Esq. Chingleput, October 8th, 1802, to Dr. Andersen, Fort St. George.

" It is with real satisfaction I forward to you a native child six years of age, whom I inoculated
on

on the 1st instant, with the vaccine matter you favored me with, and which from the appearance of the child's arm, I have reason to hope has taken the infection.

The first symptom observable was on the sixth day after inoculation, when the child complained of pain in the axilla, and soreness where the incision was made, she had also some fever—on the seventh in the morning, the edges were considerably raised, and had a glossy appearance, with a depression in the center, and it has now every other appearance of the pustule described by authors who have written on the interesting subject of cow-pox inoculation, however should I in the present case be deceived, and should it not prove what I sincerely hope it is, the genuine cow-pox, I trust you will favorably accept my intention.

The bearer of this is the child's father, who will give you any information respecting the symptoms which may appear from the date of this—I have just inoculated two children with the matter from the pustule, and will inform you of the success."

Extract of a Letter from Mr. Gourlay, Assistant Surgeon, dated Tellicherry, September 27th 1802, to Dr. Keir, Bombay.

" I arrived here in good time,—the two boys you so carefully inoculated, I was happy to find during

during the passage were affected with the disease in the most satisfactory manner,—I have from these subjects inoculated 23 Children here, and I have sent the disease to Cannanore, Callicut &c. &c. &c. so that the vaccine disease may be considered as introduced into Malabar.

The natural small pox is now raging in the Province, and the natives are anxious for the Cow pox."

Copy of a Letter from Dr. Meek at Cochin, to Dr. Anderson Madras, dated Cochin, 10th October, 1802.

" Having on the 1st instant, received a supply of vaccine matter on plates of glass, on Ivory lancet points, and on thread, from Dr. Keir at Bombay, taken on the eighth day after inoculation, the matter being exactly eight days old when it reached me, I inoculated four children from each of the four parcels of matter, and I feel peculiar satisfaction in communicating to you that, with eight of the twelve, I have succeeded in the most satisfactory manner.

The disease in all, ran its course in the usual way, nor was the attendant fever of such moment as to occasion the smallest uneasiness or inconvenience to either the parents or children, each puncture

was

was followed by a single pustule, nor was more to be perceived either on the arms or body.

Those inoculated from the glass have all succeeded, but two that were inoculated from the Ivory lancet points, and an equal number from the thread, have failed.

I have this day from the successful cases inoculated 2 more; (of which number are three young ladies) I have sent by Tapal, matter to the senior Surgeon at Pallamcottah, and to Mr. Robertson Assistant Surgeon Anjengo, so that there now remains but little doubt of this most important discovery and blessing being soon very generally disseminated throughout the Peninsula:

Extract of a Letter from Mr. J. Hay, to Doctor Anderson, dated Errode Oct. 19th 1802:

" The character and appearance of my Cow pox pustule in every respect coincide with that of the genuine disease given us by Dr. Jenner, and with the plate in vol. 1. Med. and Physical Journal p. 120 given by the Engraver, shewing the progress of the pustule in the arm of his own child; excepting that, no vesicle whatever has appeared in any one case unless where the lancet introduced virus; and that the scabbing process is sooner perfected.

Only

Only three of the persons inoculated by me have been sensible of any disorder of constitution, and in none of them has it occasioned a disease requiring any medical relief whatever, nor scarcely such as to render a change of diet necessary—the three who were indisposed say they had slight fever, and this happening in the night, I did not observe it in any of them.

The only symptom common to all of them, besides the pustule, is a slight affection of the axillary glands.

No symptomatic Fever has shown itself, nor has the general constitution been affected in any way. The spreading red areola around the vesicle has been more extensive than in the inoculated small pox, but except when touched, it has given little pain, and has always soon disappeared.

From the disease being so very mild here, I am of opinion that the subject from whom Mr. Carnie supplied me with matter most probably had the disease in the most favorable manner, and that too much attention cannot be paid to the choosing only such subjects from whom matter is to be taken, as have the vaccine in the mildest possible manner. Dr. Woodville and Pearson's "reports of inocula-

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tion for the Cow-pox" shew in the strongest light of how great importance to the public it is, that matter for communicating the infection, be taken only from such persons, as have the disease in the most mild way."

Dr. Desborah Surgeon to the Residency at Poonah, having failed in producing the infection with virus sent to him at different periods, Government humanely directed that subjects affected with the Cow-pox, might be sent to secure the introduction of the disease, into the capital of the Maharashtra empire. The following letter shows the success resulting from this measure.

Extract of a letter from Charles Desborah Esq. Surgeon to the Residency at Poona dated Oct. 20th to Dr. Keir.

"The Bramin who was sent by Government with two children under the vaccine infection, arrived here on the 15th with one of them, the bringing of both would have retarded his journey.—He reached this place in six days according to his engagement, and at the very point of time.

On the Bramins arrival I inoculated several children, and I have now the satisfaction of informing you,

you, that the operations have succeeded compleatly, and that I have to day, the sixth from inoculation— inoculated several children with the matter from my first patients. The Bramin has also commenced his practice in the town of Poona,—I doubt not of his success, for he appears to have made himself under your instructions, perfectly master of the method of operating, and of the whole progress of the infection.”

Extract of a letter from Mr. Hoyes Assistant Surgeon, dated Cundapore Oct. 20th 1802, to Dr. Keir Bombay.

“ I wrote you a few lines informing you that the Cow-pox has succeeded in three patients. From these three I have inoculated 30 more who have had the disease in the most unequivocal manner, and without any complaint, except slight pain and swelling in the axilla of the infected arm.

I have now upwards of one hundred patients in different stages of the disorder, and expect many more in a few days.”

The following very satisfactory account of the diffusion of the vaccine disease throughout the island of Ceylon, as published in the Government Gazette by the Medical Superintendent General, Thomas Christie

Christie Esq. will be considered as elucidating the history of the disease on that island.

"The extensive diffusion of the Cow-pox throughout this island, and the great attention of the Medical Gentlemen at the different stations to this subject, enable me to state several facts regarding the history of this disease, which from the great importance of the subject will, I think, prove interesting to many of your readers, and altho' few of the circumstances hereafter to be mentioned, can appear novel to professional men, who are acquainted with the various writings on the vaccine disease in Europe, they may I think afford satisfaction to them, in as far as they tend to prove, that the Cow-pox, when imported into the Torrid Zone, continues to preserve the same benignant specific character, and to be governed by the same laws, as in the more temperate regions of Europe.

Above two thousand subjects of all ages and descriptions, have been inoculated with Cow pox in the district of Columbo during last month, and although I have not yet received the regular reports from the more distant stations, I have reason to believe from occasional communications, that the number of persons inoculated through'out Ceylon during October, has not been less than three thousand five hundred.

In

In all these the disease has preserved its original mild nature, and in no case, have any bad consequences, or even dangerous symptoms, been occasioned by the inoculation.

In all cases in which the inoculation succeeds, slight inflammation and elevation of the skin are perceptible on the 2d, 3d, 4th or 5th day, and about the 6th, a vesicle is in general distinctly formed. This vesicle of a cellular structure, depressed in the center, and containing pellucid lymph, continues to encrease till about the 4th day, when the matter begins to ooze out, and the areola to form; or what I consider more descriptive in a native subject, a circular inflammation not unlike a common boil, the elevation and hardness of which, can be plainly felt to extend for half an inch or more round the vesicle. In European subjects this assumes the appearanc of a beautiful scarlet areola and is the principal distinguishing characteristic of the disease, without which the inoculation can not be considered as effective. About the 12th day, this circular inflammation gradually subsides, and the whole of the matter having oozed from the vesicle, now forms a shining scab of a brown colour, which in a few days drops off, and sometimes leaves a superficial sore behind it.

The

The size of the pustule is various in different subjects, but the circumference of the vesicle in general exceeds somewhat that of a large pea.

Pain in the axilla, though not always present, is a very constant attendant of the disease, and generally comes on about the 5th, and lasts to the 10th day. Some degree of fever is also in most instances present for a day or two, and generally accedes about the 4th, 7th, or 8th day.

I have also observed in a few instances, a short paroxysm of Fever on the 1. 2. or 3 days from inoculations, and have been the more particular in remarking this circumstance, in consequence of an observation of Mr. Kennedy at Hyderabad on this subject, but as it happened with us in only a very small proportion of cases, I am apt to believe that in these its occurrence was accidental, and not at all connected with the inoculation, since similar slight attacks of fever are by no means unfrequent, with the inhabitants of this island.

We have generally at Columbo inoculated in both arms for the sake of security, except in the case of young infants, and I think this precaution certainly diminishes the risk of failure and also tends to encrase the fever, which in an adult I consider as

rather

rather a discreditable object, since it never proceeds to any alarming heights, and its occurrence seems in general to satisfy the minds of the patients themselves more completely, than when the symptoms are confined to the mere local affection.

In two or three Children, where the fever was unusually smart, the irritation seemed to have been kept up by worms in the intestines, as immediate relief was obtained on voiding some of these. In one case of this description the patient, an European child of two years of age, was afflicted on the 8th day from inoculation, with spasms of rather an alarming nature, but these I believe proceeded entirely from worms, as his abdomen was hard and tense, and he appeared to refer his complaints to that part. These disagreeable symptoms were readily removed in this child, as in other instances, by the operation of a small dose of calomel, which brought away some worms.

In one patient, a native, Jascorin aged 24 years, who accompanied me from Matura to Wembaugtote, (a distance of fifty miles) in order to introduce the disease at the latter station, there was on the 8th day from inoculation an evident encrease of the salivary discharge, and in addition to the usu-

al symptoms of pain in the axilla, slight fever, and head ache, he complained of soreness of his throat, and difficulty of swallowing, for that and the following day, but his complaints on the whole, were attended with so little inconvenience, that although he travelled on those days, he preferred walking to riding in a Doolie, which was provided for him. The soreness of the throat, and encrease of the salivary discharge might possibly be accidental, but from analogy with the small pox, and the circumstance of these symptoms keeping pace with the vaccine fever, I am apt to believe they were really connected with the disease, and indeed in one or two cases which have occurred since, the patients have complained of slight soreness of the throat, on the day on which they had the Cow-pox fever.

Although the occurrence of any pustule except on the inoculated parts, is an extremely rare occurrence in the true vaccine disease, and is I believe still doubted by Dr. Jenner, yet we have on Ceylon certainly seen three or four instances, where one or more pustules, bearing all the characteristics of the vaccine, have appeared on parts of the body distant from the seat of inoculation, and which I cannot conceive were occasioned either by an accidental prick of the lancet, or from a secondary inocula-

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tion by means of the patient scratching the pustule, and afterwards another part of his body, as the secondary pustule has shewn itself on a distant part of the body, and at a time when no virus was formed in the inoculated pustule.

This is most strongly exemplified in the case of a boy, now, under the care of Mr. Orr, in whom a distinct well marked vaccine pustule, appeared on the back part of the thigh, on the 4th day after inoculation in both arms. The inoculated parts shewed the usual appearance of incipient pustule on the 3d day, and on the following that on the thigh appeared, since which time the three pustules have ran their course regularly.

Mr. Carnie formerly inoculated at Jaffnapatam, with matter taken from a secondary pustule on the wrist, and with it produced the true vaccine disease. Mr. Orr has this day inoculated three persons, with matter from a pustule on the thigh of his patient, and if he succeeds in producing the true vaccine disease, the experiment will I think be conclusive, as to the possibility of secondary pustules, and also of their containing the same specific virus as the inoculated ones. I have never seen any general eruption, which with reason I could attribute

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to the vaccine inoculation. Patients under vaccine inoculation have occasionally shewn slight eruptions of pimples or prickly heat, at the appearance of which they were alarmed, but these have soon died away, and seemed to me to be only casual eruptions, which are so common at all times in this country, and must necessarily be more frequent when the patient labours under any febrile affection.

Nine or ten patients who have passed thro' the Cow-pox on this Island, have already been subjected to the experiment of inoculation with small pox matter, and all of them have perfectly resisted the action of that virus, so that the fact, that a person that has passed thro' the Cow-pox, is ever afterwards secure against the exposure to small pox contagion, may now be consider'd as fully demonstrated in this country, as well as in Europe.

The existence of the natural small pox, has however also given us an opportunity of seeing verified an observation of Dr. Woodville's, that altho' a patient that has passed thro' the Cow pox is for ever afterwards secure against the effect of exposure to small pox contagion, yet that inoculation for the former disease, will not anticipate the small pox, or

prevent

prevent its progress, if the infection has been received previous to inoculation, or even previous to the accession of the Cow-pox fever.

In two cases at Colombo, the patients on the day after inoculation were seized with severe fever, and on the third day, an eruption of small-pox took place, which however could be traced to natural infection, the disease being in the neighbourhood. The cow-pox pustule formed at the usual time, and both diseases pursued their progress without interruption.

One of these cases terminated fatally, and their occurrence ought to teach us the necessity of cautioning our patients, against exposing themselves to the infection of small-pox, until the cow-pox has finished its course, and of preparing them in all cases when the small-pox is prevalent, for the possibility of the occurrence of both diseases.

From the prevalence of Measles at Point de Galle, we have also had an opportunity in two cases, of observing the combination of Measles with Cow-Pox, or rather the occurrence of both diseases at the same time, in the same subject, for they both ran their course separately and distinctly. In one of these cases which I saw, the eruption of Measles appeared

peared on the 3d day after Inoculation, and neither the eruption or fever seemed at all encreased, by the presence of the vaccine infection. The vaccine vesicle formed in the usual time, but it was the opinion of Doctor Yate's Medical Superintendant of the Galle district, who carefully watched the progress of these cases, that the formation of the areola, was in both retarded one or two days.

The shortness of time since the cow-pox has been introduced into this Island, does not enable me to say much with respect to its effects in removing, preventing, or alleviating other ailments. On this subject I have only to remark, that in an European child who was cutting teeth, and for some days had been subject to an eruption of vesicles, which came out in a few hours on different parts of his body, and left a distressing rawness and excoriation, this complaint was removed on the accession of the cow-pox fever, and formation of the areola round the pustule, soon after which the skin became clean, and free from eruption.

The cow-pox has in general been propogated from one station to another on this Island, by means of inoculated patients, for we have found dried matter on threads, or glass, a very uncertain means
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of conveying the infection to any distance. The only cases in which dried matter has succeeded on Ceylon, are those of John Sybelle at Trincomallee, with matter from Bombay thirty two days old, and that of Anatchie at Columbo, with matter from Trincomallee six days old. In the latter the fever was very considerable, and the pustule from the nature of the inoculation by incision, was oval, and much larger than usual. In consequence of this it would appear that the virus in the pustule was in a very diluted state, for out of eighteen patients inoculated from her, only one child took the disease, while of an equal number inoculated from this child, who had a small vesicle, scarcely one failed.

As soon as matter can be procured from the vesicle, it appears to be effective, and continues so till the areola begins to form. I have occasionally made use of matter on the 6th, 7th, 8th and 9th days with effect, but generally prefer it on the 7th or 8th. The inoculation with recent matter has always been performed at Columbo, in the same way as is usual for the Small Pox, by inserting in an oblique direction the point of a lancet armed with virus, immediately under the cuticle, and retaining it there some seconds. The inoculation in this way, generally takes place in both arms, (if both are punctured)

red) and seldom fails altogether, our failures have not I think exceeded one in fifteen cases, and in these I have always found the patients cheerfully submit to a second or third trial. Indeed the eagerness which the natives of Ceylon, particularly on this side of the Island, shew to benefit by this discovery, is really wonderful, and truly gratifying.

The inoculation having sometimes assumed a doubtful appearance, the operation has been repeated, and in several of these cases, the first inoculation has afterwards put on the regular appearance, and the second also has taken effect, having produced another pustule, which ran its course at the same time with the original one, although in a different stage.

The possibility also of producing the vaccine pustule on a person who has had the small-pox, has been put to the test of experiment by Mr. Cairnie, who inoculated himself and several children, who had passed thro' the small-pox, and in one of these a distinct vaccine pustule was produced, though not attended with any fever or pain in the axilla.

Our rapid success in extending the disease here, is I think in a great degree to be attributed, to the minds of the natives having been familiarized to the

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Idea of inoculation, by means of the benevolent institutions which have for some time been established on this Island, for Inoculation with the Small Pox; and to the wise measure of Government, in circulating addresses in the native languages, explaining the numerous and important advantages of vaccine Inoculation.

This practice is now happily introduced at even the most remote stations on this Island, and I entertain the most sanguine hopes, that by means of it, we shall in a very few months eradicate the Small Pox entirely from these settlements."

The interest occasioned by the account of the introduction of the vaccine disease at Bombay, was great and general.—Dr. James Anderson Physician General at Fort St. George, humanely considered that it would be of importance, to circulate through the medium of the Madras Gazette, all the reports that were transmitted to him on this subject.

These communications enabled medical men to compare the appearances in their own patients, with what occurred to others, and informed them of the progress of the disease, from station to station.

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The exertions of Dr. Anderson were zealous and unceasing;—he forwarded to every medical man, and to many others, copies of his printed correspondence;—the foregoing letters, as well as those that follow, in proof of the genuine nature of the disease, and of its power in preventing the small-pox, I have been enabled to collect from these printed papers, and I gladly embrace the opportunity of expressing my acknowledgements for his great attention in sending them regularly.

It must give pleasure to Dr. Anderson to reflect, that the extensive dissemination of the vaccine disease throughout India, has been greatly promoted by his care and humanity.

FORT WILLIAM,—DECEMBER 1, 1802.

The Governor General in Council is pleased to direct, that the following letter, with its enclosures, addressed by John Fleming, Esq. first Member of the Medical Board, to His Excellency in Council, be published for general information.

To His Excellency the Marquis Wellesley, K. P. Governor General in Council.

MY LORD,

It is with the highest satisfaction I do myself the honour of acquainting your Excellency, that after repeated

repeated disappointments we have at last through the benevolent attention of Dr. Anderson at Madras, been so fortunate as to obtain the recent matter of the cow-pox, and that we have thereby been enabled to introduce the practice of vaccination into this settlement. I herewith enclose the letter, with which I was favoured by the Doctor on the subject, together with one, which I have received from Captain Anderson, commander of the ship Hunter, whose assiduous attention to ensure success to the important commission, with which he was entrusted, in very meritorious.

John Norton the boy vaccinated by Captain Anderson on the 12th instant, arrived in Calcutta on the 17th, with such evident and decisive marks on his arm of being infected with the genuine cow-pox, as left no room for doubt or hesitation. As the matter was already ripe for communicating the infection, three children born of European parents, belonging to His Majesty's 10th Regiment, were vaccinated by Mr. William Russell on that day; and on the day following the operation was performed on eight others. Among these were two children of Mr. Barlow, one of Colonel Dyer, one of Mr. Bitch, one of Mr. Traill, and one of Mr. Binny, in all of whom, as well as in the three children of

of the 10th Regiment, I had an opportunity of observing the progress of the infection, and from comparing the symptoms and appearances produced by it, with the minute and circumstantial descriptions given by Doctor Jenner, Mr. Atkin, and Dr. De Carro, and with the coloured plates, by which their descriptions are illustrated, I am perfectly satisfied, that it was the true vaccine-disease. Messrs. Ruffells, Hare Shoolbred, and other Medical Gentlemen, who had an opportunity of seeing the children, are fully impressed with the same conviction. In confirmation of this important fact, I think it proper to mention, that three children who were inoculated with the thread sent me by Captain Anderson from Kedgeree, as mentioned in his letter, received the infection, and shewed in the progress of the disease the same characteristic symptom and appearances on the arm, as those that were inoculated from Norton. The same satisfactory result was experienced in respect to two children inoculated by Mr. Shoolbred on the 20th, and two others on the 21st, from matter taken from Norton's arm on the 19th, all of whom, he assures me, exhibited in the most unequivocal manner, the distinguishing symptoms of the genuine cow-pox.

The settlement being now, as I conceive, in complete possession of the benefit derived to man-

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kind from Doctor Jenner's celebrated discovery, I take the liberty of submitting to your Excellency's consideration, my opinion on the best mode of preserving the continuance of so great a blessing, and spreading it as rapidly as possible throughout the provinces.

For attaining the first of these important objects, I would recommend that a Surgeon of approved skill and assiduity, should be appointed to the charge of preserving a constant supply of recent genuine matter, for the use of the metropolis and the subordinate stations; and that it should be a part of his duty not only to vaccinate the children of such of the Natives as might apply to him, but also to take every opportunity to instruct the Hindoo and Mahomedan Physicians in the proper mode of performing the operation, and to give them precise and clear information respecting those symptoms and appearances, by which the specific genuine cow-pox may be distinguished from other eruptions.

To facilitate the general adoption of the practice of vaccination by the Natives, I beg leave to suggest that a notification should be published in the Persian, Hindevy, and Bengalese languages, and also in the Sanscrit, giving

1. A succinct History of the discovery, in which the curious, and to the Hindoos, very interesting circumstance that this wonderful preventive was originally procured from the body of the cow should be emphatically remarked.
2. An explanation of the important, and essential advantages which vaccination possesses over the small-pox inoculation, and

Lastly an earnest exhortation to the Natives of these provinces to lose no time in availing themselves of this estimable benefit, scarcely inferior to any that ever was communicated by one nation to another.

I have the honor to be,
 With the greatest respect,
 My Lord,
 Your Excellency's most obedient
 Humble Servant,
 J. FLEMING,

1st Member of the Med. Board.

Calcutta, November 29, 1802.

(COPY)

Fort St. George, October 11, 1802.

DEAR SIR,

Not having heard of the Bombay Cow-pox matter succeeding in Bengal, I take the opportunity

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bity of the ship Hunter sailing, to inoculate two Boys born of European parents at Botany Bay (where the small pox has never appeared) belonging to the ship, by whom Captain Anderson, the commander, hopes of being able to continue the disease in succession until his arrival at Calcutta.

The matter with which these two Boys have been inoculated, was taken last night from the arm of a healthy child inoculated at Chingleput on the 1st instant, with threads sent on the 9th ultimo from Trincomallee by Mr. Rogers, the disease appears to all here to be of the genuine kind, and confident of your attention to promote the benefit of this invaluable discovery,

I am very truly yours,

(Signed) JAMES ANDERSON,
JOHN FLEMING, Esq.

Calcutta.

(COPY.)

JOHN FLEMING, Esq.

SIR,

Agreeably to your desire, I have the pleasure of sending you the following memorandum, respecting the persons I inoculated for the Cow-pox during my passage from Madras.

John

John Cresswell, a boy born at Port Jackson of European parents, aged about thirteen years, was inoculated at Doctor Anderson's house at Madras, on the 10th of October, from a native child who had arrived that day from Chingleput. As the disease made its appearance rather late, and afterwards advanced very slowly, I did not take matter from him till the 22d ultimo, when I inoculated M. A. an European child, aged eighteen months. From her I inoculated Harry, a Malay boy, aged about seven years, on the 2d of November. And on the 12th, Charles Norton a boy born at Port Jackson of European parents, aged about fifteen years, was inoculated from Harry. The disease having made its appearance in due time, as soon as the ship arrived at Diamond Harbour, I sent him to town, where he arrived on the 19th instant, and was disposed of as you directed.

The cotton threads which I sent you from Kedgeree, were strongly impregnated with vaccine matter taken from the European child and the Malay boy, on the 2d and 12th instant, as particularly marked on each.

I have the honor to be,

SIR,

Your most obedient humble Servant,

(Signed) WM. ANDERSON,

Calcutta, November 27, 1802.

The

The Governor General in Council is pleased to order;

1st.—That the high approbation of His Excellency in Council be signified to Doctor James Anderson, Physician General and first Member of the Hospital Board upon the Establishment of Fort St. George, for the benevolent attention, assiduity, and skill, manifested by him in promoting the introduction into these province of the benefit of the valuable and important discovery made by Doctor Jenner, and that this order be transmitted to the Right Honorable the Governor in Council of Fort St. George, for the purpose of being duly signified to Doctor Anderson.

2d.—That the Chief Secretary do signify to Captain Anderson, Commander of the ship Hunter, the thanks of the Governor General in Council, for his assiduous attention in insuring the success of the important commission with which he was entrusted.

3d.—That the Chief Secretary do signify the approbation of the Governor General in Council to John Fleming, Esq. and to Mess. Russells, Hare, and Shoolbred, and the other Medical Gentlemen, employed in this important occasion, for their diligence

ligence and ability, in promoting at this Presidency the successful introduction of Doctor Jenner's discovery.

4th.—That Mr. William Russel be appointed to superintend the further promotion of the benefits of Doctor Jenner's discovery throughout the Provinces subject to the immediate Government of this Presidency.

5th.—That a notification be prepared and published in the Persian, Hindoo, Bengalese and Shanscrit languages, according to the suggestion of Mr. Fleming.

*By Command of His Excellency, the Most
Noble the Governor General in Council,*

J. LUMSDEN,
Chief Sec. to the Govt.

Having traced from authentic documents the history of the introduction of the cow pox at this place, I shall describe the disease, as it has appeared to us in its various stages, the symptoms attending its progress, and the means of distinguishing the true disease from the spurious.

About the end of the third, or beginning of the fourth day, on examining the part where the matter was

was inserted, it appears slightly inflamed and fester'd. If the patient be of European parents, or the skin of a light colour, it will be evident at this period, whether the inoculations have succeeded; but when the skin is very tawney or black, it is frequently difficult to pronounce decidedly, until the fifth day.

On the sixth day, the inflammation is considerably advanced, the part has a raised appearance, and a small vesicle is formed, showing a depressed, discoloured speck in the centre; if the vesicle be slightly punctured, a small quantity of limpid virus oozes out.

On the eighth day, a well marked vesicle is formed, about the size of a pea, circular and flat, with the depression in the middle very distinct. If the skin be white or light coloured, about this period an inflamed ring, or areola, is observed to surround the pustule, the axillary glands become swelled and painful, and a sense of weight and stiffness affects in some cases, the shoulder and pectoral muscles.

These symptoms in some cases proceed to a considerable height, and occasion great uneasiness, altho' more commonly, a slight degree of tension in the axillary glands, and soreness about the arm pit are all that occur.

About the 9th day, the vesicle appears to have attained its greatest height, and shows an appearance very different, from the variolous pustule. It continues round or oval, but never rough or indented in the margin ; and altho' rising above the skin, is always flatten'd, and has never the conical appearance, that a pustule of small pox has. The matter it contains is not as in the small pox in a single bag, but in a number of distinct cells, each of which it is necessary to puncture, in order to obtain its fluid.

The inflamed ring or areola, frequently surrounds the pustule for an inch or two, giving the arm the appearance of a degree of Erysipelas, and the inoculated spot, and parts contiguous, feel like a Phlegmon or boil.

From the 10th to the 12th day, the vesicle begins to dry and turn black in the middle ; by the 14th day, it is changed into a scab of a dark brown, or black colour, which falls off from the 14th to the 18th day, and leaves a mark on the arm. The vaccine disease has now run its course, and exerted an influence on the habit, capable of securing it from the contagion of small pox.

The local affection and appearances of the vesicle as I have described them, have shown very little variety

Variety in their progress; a much greater latitude has been observed, with respect to the constitutional symptoms, which have varied materially. In some cases, a considerable degree of febrile indisposition is observed, during the 5th or 6th day from inoculation, but more generally, the fever comes on about the 7th, and continues during the 8th day; in cases where the pustule has been much resorted to for virus, and the cells opened to obtain it, the inflammation, tension of the glands, as well as fever have appeared to be greatly increased. It frequently happens however, in cases where there is swelling of the axillary glands, and where the vesicle is distinctly formed, and assumes the regular appearances, throughout the various stages, that there has been no febrile uneasiness, or that it has been so slight as to escape notice.

The affection of the axillary glands, is in every case more or less evident, and forms a leading symptom in the history of the disease. The accession of fever frequently comes on before noon, and continues for a few hours; towards the evening, there is again an increase of fever, which also continues for a short time, and leaves the patient without any complaint. In many cases where there is no fever throughout the disease, the patient complains of headache

headache or drowsiness, from the 6th to the 8th day. It has been frequently observed that after the accession of fever about the 7th day, a recurrence of febrile indisposition, has been complained of about the 10th day, frequently in a more severe degree than the primary fever. I have seldom however found the fever, or tension of the axillary glands, require any particular attention. I have indeed seen two instances where the inflammation of those glands, terminated in suppuration, and where poultices were useful and necessary, the tumours burst, and the sores healed readily. It was not observed, that the local or constitutional symptoms in those cases, were more severe than generally take place; in both cases the irritation produced by the suppurations, occasioned pretty severe fever.

The vaccine disease throughout its progress, as well with respect to the appearances of the inoculated spot, as the general or constitutional affection of the system, has shown here a good deal of uniformity; and in several thousands which I have subjected to the influence of this disease, the result has been as nearly as possible what I have mentioned.

On the 9th day, or after 8 compleat days from inoculation, I have always found the matter in the greatest

greatest plenty, the vesicle is turgid, and the virus obtained from it, thin and limpid; it is also readily procured in considerable quantity, by slightly puncturing, the outer white lucid ring with the point of a lancet. I have frequently found it difficult to obtain colourless matter after the 9th day, as it appears to undergo some change, or decomposition; and is alter'd from a limpid, to a white, or pus like matter. I think I have also failed more frequently in my inoculations, when I used virus from a vesicle on the 10th day, than in cases where I procured it on the 8th complete day from inoculation. I have sometimes used matter from a vesicle of six days duration, which is too soon, as it is not only difficult to obtain the virus in sufficient quantity, but the success of the operation is also more doubtful.

The vaccine pox with subjects of every description, has proved a safe disease, with infants and very young children however, it has been much milder than with older children, or grown up people; in the former case, nothing but the local affection has been in general perceptible, whereas with adults, the primary, as well as secondary fever, has been in many instances pretty severe for several days. It some-

times happens, when the pustule is scratched and irritated, that the scab instead of falling off, from the 14th to the 18th day, continues to exhibit an angry ulcerous aspect: a degree of redness like erysipelas, in a few cases has come on, and affected the whole arm. When this is the case, some attention is necessary, to prevent the original vesicle from degenerating into a foul, and troublesome ulcer. Such consequences are no doubt very rare, but I have seen two cases, where from inattention, and carelessness in allowing children to tear and scratch themselves, the whole arm became swollen, and a number of disagreeable sores, difficult to heal, were produced. In such cases, the application of camphorated spirit, or strong goulard water, with the use of laxatives, have been necessary to accomplish the healing of the sores.

Any person that has observed the genuine vaccine pustule in a few cases only, and has devoted a common degree of attention, to the different appearances that take place, during its progress, can seldom have much doubt in distinguishing the real, from any case of a spurious nature that can occur. It may be impossible or difficult to explain why the same virus, shall when inserted in the same way into different subjects, produce in some, the genuine disease

disease, and fail entirely in others; and sometimes though producing an affection of the part, yet occasion an appearance of disease, very essentially different from the real cow-pox, and without producing the necessary change in the constitution, to secure exemption, from the variolous contagion.

Whether an explanation of these facts can be obtained, or not, it becomes a subject of the last importance for a medical man to attend to, as without a careful discrimination, subjects may be often pronounced safe from the contagion of small-pox, when in fact the vaccine disease has not been present, nor excited the usual constitutional symptoms, or produced the regular local affection.

I have observed three varieties of spurious cow-pox, or more properly speaking, I have seen that after the insertion of genuine virus, local affections have been produced, essentially different from each other, and very far from putting on the appearances of the true disease.

The first variety occurs most frequently, and on every account merits attention; it runs its course very rapidly. On the 2d day the inflammation is considerable; about the third day, it is very much increased, and surrounded with a considerable de-

gree of redness. About the 6th day, instead of a vesicle, which ought to be formed with the usual characteristic marks, the part has the appearance of an irregular fester'd sore, and on being punctured or rubbed, a little pus or discoloured fluid, is discharged instead of the limpid vaccine virus already described. The pustule, or fester'd spot is never flat, it has never the lucid edges, nor is there any depression or speck in the centre; it is also smaller, and has never the smooth, round, or oval appearance, that the genuine vaccine pustule has. It resembles a small fester'd sore, from any poison, or the wound of a thorn, and has a similar duration. The whole process of the disease is over about the 8th or 9th day, as the scab generally falls off about this period. No constitutional symptoms attend this variety, nor have I ever observed any fullness in the axillary glands; after all however, it requires experience and attention not to mistake this kind, for a very mild sort of cow pox.

In some cases I have observed a spongy, or warty-like variety of spurious cow-pox, in this as in the former case, the inflammation comes on too early; about the 3d day, there is a considerable degree of redness, and a discharge of a coloured, or serous fluid, a good deal resembling pus; this continues to exude

ude from time to time, and when the part is not rub-
bed, forms a crust, or spongy-like substance, which
increases in size from continued exudation, and
becomes dry in the air. I have seen a few cases,
where the matter was of the size, and a good deal
resembled a split rough almond, laid on the inocu-
lated spot.

In a few cases I have observed a different ap-
pearance, but whether it be a variety of the last, or
another species of spurious disease, it is difficult to
determine.

About the 2d day from inoculation, the cuticle
appears raised, as if a small blister had been applied,
the vesication gradually continues to increase, for two
or three days; I have seen a few cases where the
blister'd-like appearance was of the size of a half-
penny; on being punctured a thin serous fluid is dis-
charged, by the 8th day, the cuticle is ready to fall
off, leaving an excoriation which heals readily. In
neither of these cases, could I discover any consti-
tutional affection, or swelling, or tension, of the
glands in the arm pit. On re-inoculating the same
subjects with fresh virus, a genuine affection was
produced, which ran its course with the usual local,
and constitutional symptoms.

Of these three varieties of spurious cow-pox, if they may be so called, the first is by much the most common, and most likely to be mistaken for the true disease. The two last mentioned varieties cannot well be mistaken, but I considered it necessary to mention them. It is of importance to decide on certain circumstances, which may always be consider'd as distinguishing the real disease, from every variety that can occur. In the genuine disease, the progress is slow and regular; the inflammation at the inoculated part, never comes on before the end of the 3d, or 4th day, this continues to increase progressively untill the 9th day; on or before this time, there is a general affection of the system, and some swelling of the axillary glands, and pain and uneasiness about the arm pit. When the skin is white or of a light colour, there is also an areola or Erysipelas-like blush, surrounding the pustule; the vesicle is always distinct, and never has that full or hemispherical appearance, that marks the variolous pustule; it is always round or oval in its base, and altho' raised, it is flat, and pitted in the middle. The fluid contained in the vesicle is always limpid, and colourless, untill after the 9th day, and a white glairy ring or border always surrounds, or marks the boundary of the vesicle;—on puncturing it, the

fluid

Arid is found in cells, distinct from each other, and the whole ring must be punctured, to discharge the contents, as the cells have no communication with each other. After the scab forms, it is a rare occurrence its leaving any sore behind it, it seldom falls off before the 18th day, when it leaves the skin sound, but slightly marked or pitted.

An attention to these circumstances, will prevent the true disease from being mistaken; for any anomalous appearances that may occur; in every doubtful case however, recourse should be had to re-inoculation, from an unexceptionable source. If after repeated attempts, to communicate the disease by new inoculations, no local disease, or only a small imperfect vesicle is produced, which runs its course more rapidly than is usual, in the true disease, we may conclude that the patient is perfectly secured by the first inoculation.

In three cases where the attempt to communicate the infection had apparently failed, when there was neither inflammation, nor a vestige of the puncture on the 6th or 7th day; yet after this period, inflammation has come on, and the disease has regularly run its course, with the usual local and constitutional affections. As these cases of protracted vac-

cination are however very rare, it is, always proper, to re-inoculate on the 5th day, provided the success of the former inoculation seems doubtful.

I have frequently observed that a vaccine pustule has been produced, containing the limpid virus, but of a small size, and warty appearance, I have uniformly considered myself justified in viewing such cases with distrust, and in consequence, I subject the patients to a new inoculation.

It appears from the testimony of many respectable authors, who have written on this subject, that secondary pustules on different parts of the body, are not uncommon. I have never however seen one instance, of any pustule being produced, unless on the spot where the matter was inserted. From the valuable communications of the Medical Gentlemen at Ceylon, it appears however that secondary pustules, have in several cases appeared. In two or three cases, I have observed pustules on the face and neck, but these cases were satisfactorily accounted for, by the accounts of the mothers, or nurses of the patients, for it was evident that by scratching the pustule, and afterwards using the nails to perform the same offices on other parts of

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the body, that a fresh inoculation was in fact performed; and in consequence a new pustule produced. In a few cases I have observed small pimples, near to the vaccine pustule, in these cases the local affection was unusually severe; these pimples never contained any virus, or if any fluid was present, it was of a coloured appearance, and different from the contents of the vaccine vesicle. I am disposed to consider these pimples, as springing from local irritation, rather than arising from the influence produced on the constitution, by the inoculated vesicle.

The natives of this country neglect to perform, their accustomed daily ablutions, as soon as they perceive that their children are affected with the small-pox, they observe the same rule after inoculation with the vaccine virus: among the lower orders of them diseases of the skin, or an itchy eruption is very common, and is sometimes their companion from the cradle to the grave.

It follows necessarily that with this tendency to disease on the skin, their neglecting to bathe, allows the eruption to become more virulent. In this manner I am disposed to account for a particular appearance, which occurred in one of our villages

in the country. Dr. Scott and myself inoculated, all the children in the district alluded to, who had not gone through the small-pox. The disease ran its course regularly, but about the 15th day, we were informed that many of the children had caught the natural small-pox; on examining them an eruption was very evident, the pimples were small but contained no fluid that was perceptible, nor had they any constitutional affection. This eruption was evidently not the small-pox, but it is very probable, that it was prickly heat, or the itch, which had gained an ascendancy by their neglecting their usual ablutions.

When the vaccine disease is introduced at any station, it becomes necessary to guard with vigilance, so great a treasure, for if it be once lost, it may be difficult or impossible soon to recover it. Here, as in England, we cannot have recourse to the parent stock, for unfortunately the cows of this region, are not endowed by providence with so great a blessing to man: whether therefore we consider the value of communicating the disease to the individual, or of preserving it for posterity, some cautions become necessary for preserving it.

Scarcely any medical treatment is necessary, during any stage of this disease, if the fever be severe
the

the common means may be had recourse to, to mitigate it, and the local affection is successfully managed, by adopting when necessary the means already mentioned.

I have when inoculating selected those only for the purpose of obtaining matter, where there existed all the local affections well marked, and where there had been some degree of fever, and swelling of the axillary glands. I have always taken matter from a pustule, on the 8th compleat day from inoculation, and if any part of it gave out coloured matter, I have rejected it, and taken only such as was limpid or colourless.

I may mention that the same vesicle, will be often found to contain the limpid virus, and coloured matter not capable of producing the genuine disease; indeed a small quantity of pus is in general formed in the centre of the vesicle, where the puncture is made, the outer glossey ring only containing the limpid virus. By attending to these cautions no mistake is likely to happen. I have passed the disease thro' some thousand subjects, and I have it now as distinctly marked, and as active in its effects, as it appeared in Anna Dushall the first subject infected in India.

Medical men who have performed vaccine inoculation, or have interested themselves in propagating the disease, must have frequently experienced great disappointment and vexation, from the number of failures, even where the inoculations have been performed, under the most favorable circumstances. Many causes combine, in increasing the difficulty we labour under. Our patients hitherto, have generally been more disposed to consider themselves conferring a favor, than receiving a benefit, and whatever injunctions may be laid on them, they are often disregarded or very little attended to. It follows of consequence that no care is taken to prevent the subject from scratching, or rubbing the part, and the virus is in consequence occasionally lost, before it has exerted any influence on the constitution.

I have lately performed my inoculations in the following manner, with very good success, as on a medium I have not more than one instance of failure in 8 or 10 cases.

After puncturing the cells gently, so as to secure an abundant exudation of the limpid virus, and without performing this so roughly as to draw blood, I apply the point of a lancet, and carefully cover both

sides of it with the limpid matter. I allow this to dry slightly, and afterwards, before inserting it, I a second time apply the point of the lancet to the virus. The lancet is introduced obliquely under the cuticle, about the insertion of the deltoid muscle or in any other part of the arm, in two or three places in each subject, and about an inch from each other. This is done in one or both arms, and the lancet is always cleaned before being used a second time. I endeavor to perform the inoculation so slightly, as not to draw blood, but if any follow, the speck is allowed to dry, and if possible the subject is prevented from touching it, until this take place. It does not appear necessary, or useful to apply either bandage, or plaster, when fresh virus is used. I have persuaded myself that inserting virus in both arms generally secures some degree of fever, and as the occurrence of this symptom is always satisfactory, I think that in grown-up people, or in cases where there is any danger from the contagion of the small pox, that the inoculation should be performed in three or four places.

It frequently becomes a matter of importance, to preserve the vaccine matter for a short time; either for inoculation on the spot, or for the purpose of conveying it to a distance. Various methods

thods have been recommended for attaining this object, and as we experienced no small degree of difficulty, in conveying the matter in an active state, even to a short distance, we had recourse to various expedients. We preserved virus on threads, between plates of glass, and on Ivory lancets, and although we not unfrequently failed in all our endeavors; we were led to prefer the first method.

The threads after being carefully and repeatedly soaked in the pustule, and after being dried, were put into silver tubes, and conveyed by post; in this way we more generally succeeded than in any other. I frequently use matter kept for some days on the elongated stopper of a glass Phial, such as is used by the vaccine Institute in London, and I succeed occasionally in this way, yet it cannot be denied that success is very uncertain when virus is used, that has been dried for only a few hours. The only certain mode of effectually conveying the disease from one place to another, is by means of subjects under the influence of the disease.

It has been recommended in whatever way the matter be kept, to moisten it before it is used, this we have found a dangerous practice, for we have constantly failed, when the least moisture was applied.

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The mode recommended by Dr. de Carro of Vienna, when the virus is preserved on threads, is certainly the best. He cuts the threads into small portions, each in length about a quarter of an inch; the cuticle is then divided in two or more places, near to each other, the threads are laid into the incisions, and afterwards a small portion of cloth is placed over the whole, to defend them from the plaster which is subsequently put on; a bandage is last of all applied over the whole.

When the vaccine virus has been preserved on glass, a spear pointed lancet after being dipped in cold water, so as to take up the smallest possible portion adhering to the point of it, is to be applied to the virus, and gently rubbed on it, so as to form a kind of mucilage, the lancet being impregnated in this manner, the inoculation is to be performed as already mentioned, this is the only case in which it can be necessary, or is adviseable to moisten the virus.

Dr. de Carro of Vienna, finding that the mode I have mentioned of preserving virus on threads frequently failed, was in consequence led to adopt the following method, as communicated in a letter to Lord Elgin, and forwarded by His Excellency to the Honorable J. Duncan.

" I have paid the greatest and most minute attention, to the various methods invented for sending vaccine matter in every form; they are all imperfect except one or two. The Ivory lancets of my invention seem to be a very valuable improvement, for which I have already received innumerable thanks from the most enlightened vaccinators. One method alone is infallible and precisely as easy for him who receives the virus, as if he had to take it in a fresh pustule. I have described it accurately p. 97. and 98, of my Second Edition. I must only add that some further experience has taught me, that whenever a child endowed with patience can be found, it is not so difficult as I once thought; that one or two pustules are sufficient to fill the " Charpie," but only that the operation is tedious, as it lasts more than half an hour. In order to impregnate this charpie well, the pustule should be opened by three or four punctures, because it is not like that of the small-pox, a single bladder, from which all the matter flows from one puncture, but an aggregation of a great number of cells, covered with one pellicle, which represent the same order as a rasp or mulberry but transversely. By one puncture therefore, one single cell is emptied. A very small quantity of

charpie about the size of half a green pea, should be laid flat on the open cells, and the fluid is very quickly pumped; when one bit of charpie is impregnated, or rather saturated; another should be laid on till it fills the concavity of one of the glasses. The two glasses well tied up, and dipped in a solution of sealing wax in spirit of wine, prevent so well the access of air, that no evaporation can take place, and the virus can be sent to any distance, and kept fluid any length of time. I have myself used some coming from Hanover and from Milan, which arrived as fluid at Vienna, as when it was put between the glasses. I forgot to say that the charpie, when impregnated should be transferred from the pustule to the hollow glass with the point of a pin, or a lancet, in order that no particle of it should be lost on the fingers."

The vaccine matter now in our hands, has already passed through many subjects; we cannot observe any change in the regular train of symptoms, marking the usual progress of this disease, or in the local affection of the inoculated spot. Those subjects inoculated in June 1802, exhibited the same appearances, that we at present observe in our patients, labouring under the disease. On my last inoculating day, I had upwards of 50 subjects,

jects, with the disease distinctly marked as I have described it; many of them suffered a good deal, so much so, that I believe they would have been considered as cases of active disease in Europe.

From these and other circumstances of a like nature, I am of opinion that we do not run any risk, of finding our disease become milder, so as in process of time to exhaust itself, and fail of producing the necessary constitutional affection, or to prevent the influence of variolous contagion.

I have not found as far as my experience goes, that any cause, or complaint should operate as an objection to communicating this disease, where we are in danger from small pox. We have inoculated young and old, robust and delicate, healthy and sickly subjects, and numbers covered with herpetic, and psoric affections of the skin. I have not observed that any of these circumstances, have alter'd in any respect, the appearance or progress of the disease. A great proportion of the natives of this island, are constantly afflicted with the itch, in a greater or less degree; the vaccine pox has seldom alter'd the character of this complaint. In some cases the disease of the skin has been apparently subdued, by the presence of the constitutional symptoms attend-

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ing the cow pox. In general however, there does not appear to be any change produced, unless as I have already mentioned, the children are neglected for some weeks, when the itchy symptoms appear to gain ground. In fact from all that we have seen, we can declare that the vaccine affection is never dangerous, and seldom produces, any unpleasant or alarming symptom; and that no circumstance of age, or even debility should prevent us having recourse to it. I am even of opinion, that several children that were weakly and frequently ailing, have acquired renovated health and strength, after going thro' the cow pox.

It would ill become me to hazard an opinion on many points connected with the origin and history of this disease, and which have engaged the attention of those ingenious and learned men who have written on this subject in Europe. Here unfortunately, altho' the cow is held in religious veneration, by the great class of natives in India, nothing as far as we can find out, like the disease of Jenner is known, which is probably confined to particular districts even in England, and depends on causes which we may never be able to explain. Any theory on this subject however, ought not materially to interest us, our business is with the inoculated pustule;

and

and as Dr. Jenner has pointed out to mankind, the value of so unexpected, and so valuable a discovery; and as it is so fully demonstrated that we are in possession of the genuine disease, which we find occasions little inconveniency to the patient, and secures for ever from the small pox; we have only to guard with care so valuable a blessing, for if once lost, we may not easily recover it.

The inoculated small-pox in Europe, from every testimony, appears a much milder disease than what it proves to be in this part of India; very few unfortunate terminations occur there; In India or more properly speaking in this Island, we have not been so fortunate. It is the opinion of the most eminent and discerning of our medical men at this place, that one casualty takes place in 40 or 50 cases, including the sequelæ of the disorder, which are, blindness, suppurations about the joints, diseased livers, dysentery and affections of the mesenteric glands, dyspnœa, &c. It has been suspected that a certain class of the diseases of Europe have become more prevalent since the general practice of inoculation for the small-pox; and it seems to be admitted that in cases where there exists a tendency to scrophula, the variolous matter frequently gives activity to the latent di-

seases,

thesis, and frequently produces lameness, or lays the foundation of fatal diseases.

Those most averse to the general introduction of the vaccine, as a substitute for variolous inoculation, do not apprehend the occurrence of any of those evils, as a consequence of the vaccine disease; this circumstance if no other ground of preference were claimed, is surely no immaterial, or trifling matter, and places in a strong and just point of view the importance of Dr. Jenner's discovery, which bids fair to mitigate the ravages, if not soon to extinguish entirely, the prevalence of a loathsome and fatal disease, which in every country, and under every circumstance, has ever proved one of the greatest evils which has afflicted humanity.

The following communications prove that the vaccine disease so successfully established throughout India, possesses the same wonderful powers in shielding the human constitution from the small pox, that it has been found to do in Europe.

Extract of a letter to Dr. Anderson Fort St. George from Mr. Carnie Jaffnapatam, October 20th, 1802.

“ You will be happy to hear that six of the persons that had gone thro' the cow pox at this place

place, have been inoculated with active matter from different small pox patients, and that all of them resisted its action on the system. I therefore think that I may now venture to pronounce with certainty, that we have got upon the island, that genuine mild disease, for the introduction of which the world are so much indebted to Dr. Jenner."

Extract of a letter from Gilbert Hall Esq. Surgeon of His Majesty's Malay Regiment dated Trincomallee November 6th, 1802.

" I have much pleasure in discharging what I conceive to be my duty, by acquainting you that we have lately put the virtues of the vaccine disease, now established on this island, to the last test, by the most interesting experiment, of inoculating subjects who had passed thro' it, with variolous matter, and of the result answering our most sanguine expectation.

On the 24th ultimo being informed by a native Doctor that there was a patient in the neighbourhood, a young man labouring under the natural small pox in the eighth, or ninth day of the disease, I lost not a moment in embracing so favorable an opportunity, but taking with me two young healthy subjects a boy and a girl, the former about ten, and the latter about fourteen years old, both of whom having been inoculated with the vaccine matter nearly

nearly a month before, had completely passed thro' that disease with all its characteristic marks, immediately went and visited him.

I found him in a small hut, extended on a cot, having his body almost entirely covered with the small Fox eruption—the disease however did not appear to be of the malignant kind, the pustules being very distinct and well filled, the matter, was thin and of a yellow tinge, and I had every reason to suppose, it was in a sufficiently active state to communicate the disorder.

From this patient, the two subjects I had brought with me, were immediately inoculated in the presence of a number of spectators, in an open area, to whom being at the time pretty confident of success, I explained thro' an interpreter, the nature and cause of this experiment.

This is now the 13th day of inoculation, & I am happy to inform you, that no eruption, or any other disagreeable or unpleasant symptom, has taken place in either of these subjects, to throw the smallest discredit on this inestimable discovery.

I have likewise to acquaint you, that similar experiments have been made by Mr.Orr of Columbo, with the same success, these no doubt will tend not only

only to overcome all the scruples which the natives might have entertained, against the reception of this blessing, but also induce them to submit to a repetition of such experiments when necessary, to convince the ignorant and bigotted of its efficacy in preserving them from that foul contagion of the small pox, from which the native inhabitants of this island in particular, have most severely suffered."

Extract from a Letter published in Ceylon Government Gazette, November 30th 1802, by Thomas Christie, Esq. Medical Superintendent General.

"The experiment of making persons who had been vaccinated, sleep with patients labouring under small-pox, has been lately repeated at Jaffnapatnam with the same success as at Colombo, and the subsequent inoculation with variolous matter continues to be occasionally practised, at the different stations on the Island, without producing any disease,

The proofs of the preventative power of the cow-pox on this Island, are therefore now more than sufficient to satisfy every reasonable mind, and I am happy to say that the inhabitants here of all ranks, descriptions, and religions, place the utmost confidence in its efficacy.

Upwards

Upwards of two thousand persons, have been inoculated with cow-pox by Mr. Orr alone, and the number of people vaccinated throughout the Island, is certainly not less than ten thousand. Of these above six thousand have been inoculated in the Columbo district, and the good effects of the introduction of the cow-pox are very evident in the Pettah of this place, where small pox is becoming much less prevalent.

Judging from our past success, and the great numbers who daily crowd to us for the purpose of being inoculated, we may indulge well grounded hopes, that the vaccine inoculation will very soon become almost general here, and that the small-pox contagion will ere long, be expelled for ever from this Island.

Doctor Pearson, who next to the immortal Jenner, has perhaps distinguished himself most by impartial investigation, of this subject, has recorded two cases in which a severe disease was produced, in consequence of the presence of Psora, (Itch) and as I observe from a late work of the learned Dr. Thornton on the subject of cow-pox, that he believes the presence of Psora ought to form a ground of exclusion to this, or any other inoculation, it may be of importance to mention, that from the great

great prevalence of this complaint amongst the natives of India, we should have been under the necessity of excluding a very great proportion of the mass of this people, from the benefits of this discovery, unless we had ventured to practise vaccine inoculation, even in cases where a considerable degree of Psora existed.

We have accordingly inoculated a great many people affected with Psora, and I am happy to say, that I have not hitherto experienced any considerable inconvenience, from extending the practice to patients of this description, although a clean part of the skin ought always to be chosen in these cases, as the vaccine pustule, from being scratched, is apt to degenerate into a simple ulceration."

Extract of a Letter from A. Kennedy, Esq. Hyderabad, November 10th 1802, to Dr. Anderson Fort St. George.

" On the 27th ultimo, I wrote you that I had that day inoculated with fresh variolous matter, five children whom I had formerly vaccinated. I have now the pleasure to transmit you the notes I made, of the appearances which took place on the arms of those, on whom the variolous matter produced topical action.

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On two of them you will observe that it had no effect whatever, not one of them have had the smallest degree of sickness or constitutional derangement, nor even a single spot or appearance of eruption is very certain; and from the freshness of the matter with which they were inoculated, and the care taken to insert it, I am inclined to think it equally certain, that had these children not previously had the genuine vaccine disease, some one or other of them; or most probably the whole five, would have had the small-pox."

To The EDITOR of the BOMBAY COURIER.

November 29th 1802.

It will give satisfaction to the publick, to learn that Anna Dusthall (the first Child that had the Cow-pox in India) has been inoculated with the matter of small pox and has resisted its action.

Mr. Kennedy was so good as to send me from Hyderabad some variolous matter on thread, with which Dr. Keir and myself inoculated Anna in two places, very near to each other, in each arm. The Cuticle was divided, and a thread of about the length of one quarter of an inch was carefully placed in each of the four incisions. The threads were afterwards well secured by plaster and bandages. This

was

was done on the 5th of this month. On the 4th day after inoculation, the arms were examined, one was then quite well; but the other had inflamed and festered.

The sore on her arm is still unhealed, and almost as large as a rupee. She is in perfectly good health, nor has she been ill for a moment, since she was inoculated on the 5th instant.

I must suppose that this angry sore on the arm, arises from the matter of the small pox, and affords a proof of it's activity.

It would perhaps have been still more satisfactory, if the inoculation had been performed with matter in a perfectly recent state, but in order to get matter in such a condition, I must, in the first instance, have communicated the disease to a subject who never had had the small pox. I did not think myself justified in producing such a disease in this populous Island, which for so many months past has been exempted from it. If once begun I did not know when it might stop, nor what misery it might produce; with such a prospect it is impossible to justify an experiment like this, however important it's object may be. I had every reason to believe that

no ill could arise freni inoculating this child with variolous matter, who had already undergone the vaccine disease.

It is well known that Anna Dushall is the only one that took the vaccine disease, of all those that were inoculated with the matter from Bussorah, and her security from the small pox, is a proof that the Cow-pox of India. is of the genuine kind. From Anna alone, the vaccine virus of this Country was derived; she is the mother of all our poison, the beneficent Medea of India."

HELENUS SCOTT.

The foregoing account proves the value of the disease originally communicated to Anna Dushall, and the annexed Extract of a letter also published in the Bombay Courier January 8th 1803, shows that our disease had not degenerated, and proves its value in preventing the small pox.

" In this populous Island we are seldom without the small pox, or if the disease disappear for a short time, the infection again shows itself about this season of the year. Of late however we have enjoyed a more than usual exemption from its ravages, as the
infection

infection has not appeared since June last, until lately. A child from Calicut labouring under the small-pox arrived here last month, and the disease soon appeared in several places, and has enabled us to put our Cow-pox to the trial."

" On the 23d ultimo I inoculated eight subjects with variolous matter, and four more on the day after, the matter was obtained on the 8th day of the eruption, from a subject labouring under the natural small pox. The virus was carefully inserted into each subject in two places, the children inoculated on the 23d had the disease in August last, and those inoculated the day after in November. The appearances have been the same in all of them; on the fourth day the wounds were slightly inflamed, on the sixth day they contained a little pus, and had an angry appearance; on the 10th day the pus was dried and the scabs ready to fall off; neither fever, nor eruption, nor any indisposition, or constitutional affection, followed these trials."

GEORGE KEIR.

Extract of a Letter from Mr. Abercrombie, dated Arcot, December 2d 1802.

" I formerly mentioned, that I had inoculated several children with the cow-pox matter which you were

were kind enough to send me, in your letter of the 20th October. The result has been, that out of eleven children, being all the subjects I could then procure, whom I first inoculated with vaccine virus, and afterwards with the most active variolous matter, not one case showed the smallest symptom of the latter disease. Besides inoculating the children with small-pox matter, I had them kept continually in the same house with a child, in whom the variola was in its highest perfection, and went through its regular course."

*Extract of a Letter from Mr. Gourlay, Angarpur,
6th December, 1802.*

" On the 10th ultimo, I inoculated two boys who had gone through the vaccine disease, (communicated to them in Bombay 18th September) with recent variolous matter, no other effect was produced from this, than a slight degree of inflammation at the punctures, which continued for nearly two days.

I lately selected from among those, (at this station) who had gone through the vaccine disease in the most satisfactory manner, five young men, and as many children; these on the morning of the 27th ultimo, I inoculated with recent variolous matter

matter from a patient in the sixth or seventh day of the disease; no effect whatever has been produced from this.

This trial has had a very good effect in convincing many of the natives here, as to the utility of the cow-pox, which they were doubtful of before."

Extract of a Letter from Mr. William Ord, Madras, January 1st 1803.

" I have inoculated with variolous matter the two first children who went through the cow-pox under my care, the pustule proceeded regularly for the first four days, on the fifth it began to fade, and on the seventh was a dry scab; nothing like fever, or constitutional affection of any kind was observed, though the children were carefully attended to all along; no doubt can be entertained of the activity of the variolous matter made use of, as the person from whom it was taken died of the confluent small-pox; the matter I sent to Pondicherry and Nellore by your desire, has been the means of introducing the disease at those stations, as I have been informed by Messrs. Stewart and Scarman, and I will continue to embrace every opportunity that offers of forwarding active matter to stations where it has not been received."

Copy

*Copy of a Letter from Dr. James Anderson P. G.
Madras, to Thomas Christie, Esq. Medical Su-
perintendent General, Ceylon.*

DEAR SIR,

The British name applied to the rescue of mankind from disease, being now established all over Europe; I trust that our endeavours here will likewise be crowned with success: as the attention of administration affords a happy presage.

In Europe, where the sciences are taught by induction from facts, a name is of little importance; but here, when authority is the only source of information, and a name directs the understanding, and conceptions of the mind, things must be managed differently.

From the Sancrit word, murtum, death, the Persian, murdun, Latin, mors, & English, murder, seem to be derived; as from the Greek a privative and maraino to wither, the term Amaranth may have been taken, as well as the name of the Turkish Emperor Amurat, and it is well known that in the year 1653, Christina Queen of Sweden, held a feast of the Gods where she presided as Amarante, or the immortal.

It is not my intention however to institute instructions, from the immaterial to the material world, but merely to say that the term amurtum, will pass more currently thro' the Kingdom of Candy, the peninsula of India, and Hindostan, than the vulgar name cow pox.

The operative part, being as zealously followed up by the Surgeons, as their respective situations can possibly admit ; a name that is pleasingly familiar to the natives, may have its use ; and I have yet found none, that takes with them so well as the Sanscrit word amurtum ; immortality ; as it prevents death from small pox, and is pleasing to them in calling up recollections of their sacred history, of this gift of Darawanter the prince of charity, of medicine, &c. the cow Camadeva, being a personage in the same Avater, amurtum has become the generic name for cows milk."

(Signed) JAS. ANDERSON,
FORT ST. GEORGE,

Jan. 10th, 1803.

Copy of a letter published in the Ceylon Government Gazette by Thomas Christie Esq. Med. Sup. Gen. Colombo January 1st, 1803.

" As I wish to rest the merits of the cow pox upon truth alone, and a full and candid exposition of

of facts, and am anxious to inculcate in the strongest manner, the necessity of guarding with the utmost vigilance against the introduction of a spurious disease, of attending most carefully to the progress and completion of the symptoms, before granting a certificate of security, and of persevering in frequently subjecting vaccinated patients to various inoculation, as the most certain test of a true disease. I think it my duty to publish for general information throughout the island, two cases which have come to my knowledge, since the publication of the Government advertisement on this subject, under date the 22d December; in which the patients have had small pox after it was conceived they had the cow-pox, and which had all the circumstances not been particularly enquired into, and considered, would have tended to invalidate the proofs of the preventative efficacy of the cow-pox.

The one, an old man of fifty five years, resident in the Serina Corle, had been inoculated at Columbo on the 29th of October with vaccine matter, and it appearing that he had the true disease, he was, on account of the distance of his residence, his infirm state, and the great press of patients for inoculation, indulged with a certificate on the 5th of November, on the 8th day of the disease; it proved however that

that this had been prematurely granted, for on exposure to small pox contagion, he caught the disease tho' in a mild form.

With respect to this case it may be observed, that from the great age of the patient, consequent flaccidity of the skin; and thickness of the cuticle, it must have been peculiarly difficult to detect a spurious disease, and that nothing but particular circumstances could justify the granting a certificate, at such an early period of the disease, as from experience we have reason to believe, that although the inoculation may have taken proper effect in the first instance, yet if the vesicle is scratched, or otherwise injured at an early period, the specific action of the virus may be destroyed, the pustule degenerate into a simple ulceration, and the inoculation prove non-effective. On this account I have ever recommended repeated inoculation in such instances, unless the areola was extremely distinct, and the fever very evident ; and in cases where there is only a pustule on one arm, we ought if possible to avoid wounding it much at an early period; even for the purpose of taking matter for inoculation.

Too much indulgence however cannot be granted to the Medical Gentlemen of Columbo; who an-

xious

xious to stop the progress of Epidemic small pox, and to satisfy the eager wishes of the natives to secure themselves against that dreadful malady, often laboured all day, and after inoculating upwards of a hundred people each, were sometimes obliged for want of time, to put off many of the people attending for inoculation, till another day.

In such circumstances it surely cannot appear surprising, that one mistake should have occurred out of six thousand cases, but what will convince every person that this was an accidental spurious case, and that the preventative effect of the cow-pox, must continue unimpeached, is that the whole of this man's family, who were inoculated at the same time with himself, continued to live in the house with him while he laboured under small pox, and still remain in perfect health.

The other case occurred in the person of a native child of 8 months, who was inoculated in a distant part of the Island, by a Gentleman who at that time had seen only a few cases of Cow-pox, no certificate was I believe in this instance granted, but there is no doubt that the Gentleman who inoculated this child, conceived it had the genuine disease, as he lately subjected this patient, with four others inocu-

lated

lated with Cow-pox from the same source, to inoculation with variolous matter, the action of which they all compleatly resisted, except the child in question, who on the 8th day had fever, on the 9th and 10th there appeared about a dozen of pustules, which had all the appearance of small pox. A child who had never had either disease, has been inoculated with matter from these pustules, in order to ascertain the fact; but time has not yet been given to show the event.

Allowing however that this was a case of small-pox, it is surely more reasonable to suppose, that the child had a spurious pustule, the insidious appearance of which had deceived the inoculator, than to doubt the preventative efficacy of the Cow-pox, after the numerous and decisive experiments, that have been performed by inoculation, and exposure to natural infection, at every considerable station on this Island as well as in many other parts of India, and every part of Europe.

The occurrence of these cases however, ought to impress on the mind of every person engaged in this pursuit, the necessity of paying the greatest possible attention to the discriminating appearances of the disease, of frequently inspecting the inoculated patients,

patients, of noting down every symptom, and of repeating the inoculation where there is the smallest ground of doubt.

After this it is scarcely necessary to observe, that it is impossible for professional men to perform their duty to their patients, by affording them perfect security against the small pox, unless after inoculation, they regularly attend the inoculating Surgeon at the periods he desires, in order that the progress of the pustule may be carefully examined, a circumstance, which I am sorry to say, has been frequently neglected by the natives, from a mistaken idea with respect to the simplicity of the disease; but although the Cow-pox is extremely mild in its nature, it certainly requires the nicest attention and discrimination to distinguish between the true and spurious disease, particularly in Indians, in whom the darkness of the skin renders the areola, the principal diagnostic, much less distinct, than in Europeans.

These circumstances have hitherto prevented my recommending the vaccine inoculation, to be intrusted to the native Physicians, but I have reason to believe that many of them have taken up the practice of their own accord, particularly in the Galle district, where I am informed by Dr. Yates, a Ban-

dah Priest has been practicing vaccine inoculation, with considerable success.

It affords me the most sincere pleasure to add, that notwithstanding the occurrence of the perverse accidents above mentioned, and some malicious reports in consequence, the practice of vaccine Inoculation continues to extend throughout this Island, and that the natives in general, place the most perfect confidence in its efficacy in preventing the small pox.

In many villages, almost every person susceptible of infection has been inoculated, and at Hambang-totte, a remote station which has little communication with other parts of the Island, the small pox which prevailed there in October last, has been banished from the district by the beneficial influence of the Cow-pox inoculation, which last circumstance, I must consider as arguing favorably for the speedy extirpation of the small pox from the Island of Ceylon, and the whole of India.

Copy of a letter from Dr. Meek, dated Cochin February 1st, 1803.

“ The vaccine inoculation has succeeded well at Cochin, I have inoculated 1,044 subjects; I have put

put 25 of them to the test of variolous contagion, and it is with peculiar satisfaction I have to state, that not one of the whole has suffered the smallest degree of sickness or constitutional derangement, nor further affection, than a slight inflammation at the punctured part, the effects of which completely disappeared in a very few days.

Four of the children were inoculated with thread, impregnated with variolous matter, sent to me by the Physician General in November last, the only appearances that followed were such as might have been expected from the introduction of an extraneous body such as a piece of thread under the cuticle. Soon after this four more were inoculated with virus, in a still more active state, sent to me from Callicut, but without being followed by any symptom of small pox.

In order however to be more fully satisfied as to the genuine nature of the disease amongst us, I procured a further supply of variolous matter from the same source, and with it inoculated a native child of two years of age, that had not had either disease, the distinct small pox followed ; and from this subject the remaining 17 were inoculated. The matter was taken fresh from the arm of the child, and from the primary pustule, and the virus carefully inserted with

with a lancet at two punctures in each. In five of the subjects no apparent topical affection took place, but in all the others, there succeeded more or less of inflammation, but without any eruption or evident disease of the system, two of the children were inmates of the same house with the small pox patient, and with equal impunity; from which happy circumstance I am perfectly satisfied in my own mind, that the disease imported into this province, is of the real Jennerean sort, and from the proofs thus adduced, capable of performing the wonders it is said to possess.

Owing to a mistake in arranging the first sheets, the following communications explanatory of the exertions used to introduce the vaccine disease into Bagdad and Bussora, were prevented from appearing in their proper place.

Extract of a Letter from the Resident at Bagdad to the Governor of Bombay, dated the 18th April 1802.

I have the highest satisfaction in announcing, as my public letter of to-day to the Resident at Bussora will show, the success which has attended the operation of vaccination at Bagdad, and I now most fervently

fervently hope your philanthropic wishes of introducing the vaccine matter to India, are in a fair way to be fulfilled.

Letter from the Resident at Bagdad to Government,
18th April 1802.

To THE HON'BLE JONATHAN DUNCAN,
President and Governor &c. in Council,
Political Department, AT BOMBAY

HON'BLE SIR, & GENTLEMEN,

I beg permission to lay before the Hon'ble Board, the enclosed copy of a Letter from me to the Resident at Bussora, and to subscribe myself with the greatest respect.

Hon'ble Sir & Gentlemen,

Your most Obedient humble Servant,

(Signed) HARFORD JONES.

B A G D A D, }
the 18th Apr. 1802. }

Extract of his Letter of the same date, to the Resident at Bussora.

It is with the highest satisfaction, I acquaint you, that by the attention and ability of Doctor Short, the operation of vaccination has been performed with success at Bagdad, with some matter which I received from Doctor de Carro of Vienna, on the 30th ultimo, and I have now the honor to send you express,

express, vaccine matter taken yesterday from the arm of a child vaccinated at Bagdad.

Your philanthropy and public spirit will lead you, I am certain, to take every means for conveying this benefit to India, and to pardon my hinting to you, what Doctor de Carro recommends when the vaccine is to be conveyed to a distance, namely, that of conveying the matter as far and as much as possible by actual vaccination; I should presume, it might so happen, that some of the Lascars, or Sepoys on board the Cruisers you will be on the eve of dispatching, may never have had the small pox, in which case, I think, a succession of vaccination performed by the Surgeon on board, could not fail of conveying the matter in a perfect state to India.—In fault of these means, might it not be possible by gratification, to procure two or three christian children to undertake the voyage to Bombay.

Extract of a Letter from Mr. Maneby, to Government dated 26th April 1802.

I have the honor to make a reference to the copies of a letter from Mr. Jones dated the 18th instant, and of a letter from Mr. Milne of yesterdays date, on the interesting subject of the vaccine inoculation, which are contained in the Diary; and I forward

forward a sealed Packet from Mr. Milne, containing an impregnated lancet with Dr. de Carros publication for the Hon'ble the President, and I flatter myself, that there now exists a very reasonable hope of the cow pox being introduced into India.

*Doctor Milnes Letter to Mr. Manesty, dated the 25th
April 1802.*

To SAMUEL MANESTY, ESQUIRE,
Resident at Bussora,

I have pleasure in acknowledging the receipt of the vaccinated materials which you sent me last night, and beg to inform you, that I have performed the operation of inoculation this morning on six different subjects, of whom, three are inhabitants, of Bussora, and three belong to the Hon'ble Company's Brig the Viper.

I am thus in hopes, of being able with such recent virus, to establish the vaccine influence in those parts, and likewise, to enable Lieut. Beaty, with the instructions which I have given him, to convey its happy effects to India.

I take the liberty of returning you an impregnated lancet, contained in a quill, which is covered with Bees wax, and also, return you Doctor de Carros publication for transmission to the Presidency

—I shall employ the opportunity of every conveyance, in furnishing you with fresh materials, as soon as I am happy enough, to effect my purpose here.

I have the honor to be with the greatest respect,
SIR,

Your very Obdt. Humble Servt,

(Signed) JOHN MILNE,

BUSSORA,
the 25th April 1802. }

*Extract from Mr. Manesty's Letter to the Governor
in Council, of the 5th of May, 1802.*

I have the pleasure to enclose a Copy of a second Letter from Mr. Surgeon Milne on the subject of the vaccine inoculation, to the interesting contents of which, I claim your attention.

To SAMUEL MANESTY, EsQUIRE,
Resident at Bussora.

SIR,

I had the pleasure of addressing you last on the 25th ultimo, and have now the satisfaction to acquaint you, that I have been so fortunate as to produce the vaccine affection in three of the four cases whom I inoculated on the morning after you sent me the materials received from Bagdad,

Understanding,

Understanding, that it is your intention to dispatch the Alert this evening, and that it is probable she may touch at Bushire and Muscat, I deem it adviseable, in addition to a fresh supply of vaccine matter, which I furnish you with for transmission to the Presidency, to provide you also, with materials and instructions respecting inoculation, which, considering the importance of this happy discovery, you will, I doubt not, be gratified in transmitting to Mr. Bruce and Mr. Seton at those places.

I have inoculated a boy on board the Alert, and shall give Mr. Jeakes such information as I think will enable him to manage, in communicating the infection to some of his people who have not yet had the small pox, in support of the disease, if possible, until his arrival at Bombay.

I shall continue to inform you regularly of the progress of vaccination here, which I shall employ every means to render speedily and extensively beneficial.

I have the honor to be with the greatest respect,
SIR,

Your very Obdt. Humble Servant,
JOHN MILNE.

BUSSORA,
the 5th May, 1802. } True Copy,
SAMUEL MANESTY.

Extract

Extract of a Letter from the Resident at Bagdad to the Governor of Bombay, dated the 7th of November 1802.

Doctor Short, who has been relieved by Mr. assistant Surgeon Hine, now proceeds to the Presidency, and as it was principally owing to his ability and attention, that we were able to produce the cow pox at Bagdad, about which, you were so much interested, I hope you will pardon the liberty I take, in mentioning it as a circumstance meriting the attention of the Hon'ble Board.

Extract of the Governor of Bombay's answer dated the 23d March 1803.

It affords a very comfortable reflection, that we have been at last able, through your assistance, and that of Lord Elgin, to propagate the vaccine disease throughout India, as well as experimentally to ascertain, that it is of the very best kind, and perfectly secures those who have had it, from the small-pox—by which, the lives of millions yet unborn may, and must indeed, be saved; and if our influence in India, has ever entailed evils on the natives; this one important act of kindness on our part, ought to be viewed as no inconsiderable or inadequate compensation.

When

Postscript.

When the vaccine disease was established at Bom-bay in June 1802, Government at the recommendation of the Medical Board, directed that the important duty of keeping it up, and of furnishing supplies of matter for transmission to different stations, should be entrusted to my care.

In the discharge of this arduous duty, I have occasionally experienced a great degree of difficulty in procuring subjects for successive inoculation.—Of late however, since the appearance of the natural small pox, the proofs of the efficacy and value of vaccination, have been so numerous and satisfactory, that the natives of every description, do not any longer entertain doubts on the subject.

In July last, I established a stock of matter in the Fort, and another in the Country;—I have one inoculating day every week at each place, and I have carefully guarded against mixing the two stocks of virus. From the uniform appearances of my patients at both places, a confirmation is afforded of the disease having preserved its true, or specific character.

I inoculate from 30, to 50 subjects at each time, as well within the Fort, as in the country; I also obtain

obtain early notice of the appearance of the small pox, and by vaccinating the children near to the spot where it had occurred, I have been enabled to prevent this malady from committing it's usual ravages.

The number on this island, that have already gone thro' the vaccine disease is very great. I hope however that a sufficient number of subjects will not be wanting to secure a continuance of the blessing of the discovery to this island, as well as to enable me to afford supplies to distant stations, where the disease may be lost.

G. K.

BOMBAY,
March 31st. 1803.

FINIS.









